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Amendment and Reply

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Amendments to the Specification:

Please replace the paragraph at page 1, from line 4 through line 7, with the following paragraph:

This invention relates to devices and methods for the treatment of tissue. In particular, the treatment involves implantation of angiogenic implants in combination with therapeutic materials such as tissue, cells or cell material into injured, diseased or otherwise dysfunctional tissue such as cardiac muscle tissue.

Please replace the paragraph running from page 2, line 19 through page 3, line 12, with the following paragraph:

In recent years treatment of muscular dysfunction with biological therapeutic materials has been a subject of increased study. Stem cells, as well as cell components, such as DNA and proteins, are considered to hold potential as a promising treatment for diseased tissue regions. It has been reported that stem cells may be capable of transforming into [[a]] highly specialized cells of a given organ in which they are placed. J. Hescheler et al., Embryotic Stem Cells: A Model To Study Structural And Functional Properties In Cardiomyogenesis, Cardiovascular Research 36 (1997) 149-162. Addition of such cells to the tissue of an organ serves to initiate growth of the tissue of that organ. For example such cells may be delivered to regions of diseased tissue of the heart with the expectation that the cells will become cardiomyocytes initiating new cardiac muscle growth to replace the diseased muscle that is present. Precursor cells may also be effective in treating diseased tissue of the heart. R.K. Li et al., Cell Transplantation to Repair Broken Hearts, Can J. Cardiol 1998;14(5): 735:744. Treatment of diseased cardiac tissue by transplanting skeletal myoblasts myoblast into the subject tissue has also been the subject of recent study. Charles E. Murphy et al., Skeletal Myoblast Transplantation for Repair of Myocardial Necrosis, J. Clin. Invest. 1996 98:2512-2523. However, effective delivery of these biological therapeutic materials is subject to the

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same concerns discussed above in connection with delivery of pharmacological therapeutic materials. Specifically, biological therapeutic materials can be ejected from the intended muscle location by movement of the muscle, prior to any ameliorative effect the cells may bring to the area.

Please replace the paragraph running from page 14, from line 5 through page 15, line 6, with the following paragraph:

Cardiomyocytes introduced into damaged myocardium are understood in the following articles, incorporated herein by reference, to improve cardiac function. Jia et al., Transplanted Cardiomyocytes Survived in Scar Tissue and Improved Heart Function, Cell Transplantation vol. 5, page 42 (1997); Li et al., Natural History of Fetal Rat Cardiomyocytes Transplanted into Adult Rat Myocardial Scar Tissue, Circ. Vol. 96, Supp. II, pages 179-187 (1997). It is further understood, however, that other cells besides cardiomyocytes can be introduced into the damaged myocardium and will differentiate into cells that function like cardiomyocytes. Sources of cells, include the skeletal muscle satellite cells and cells from the bone marrow, are described in the following articles, incorporated herein by reference. Chiu et al., Cellular Cardiomyoplasty: Myocardial Regeneration with Satellite Cell Implantation, Ann Thorac. Surg. Vol. 60, pages 12-18 (1995); Ferrari et al., Muscle Regeneration by Bone Marrow-derived Myogenic Progenitors, Science vol. 279, pages 1528-1530 (March 6, 1998); Pennisi, Bone Marrow Cells May Provide Muscle Power, Science vol. 279, page 1456 (March 6, 1998). According to these publications, non-cardiomyocytes can be induced to differentiate into cells with structure and function analogous to cardiomyocytes, thus making a variety of cells available for transplantation into the damaged myocardium with the anticipation of functional benefit. Specifically, stem cells and precursor cells have shown promise of if differentiating themselves when placed place in specialized host tissue, thereby providing a potential mechanism for growth of the chosen host tissue. J. Hescheler et al., Embryotic Stem Cells: A Model To Study Structural And Functional Properties In

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Cardiomyogenesis, Cardiovascular Research 36 (1997) 149-162; R.K. Li et al., Cell Transplantation to Repair Broken Hearts, Can J. Cardiol 1998;14(5): 735:744. Additionally, skeletal myoblasts transplanted into diseased tissue such as the myocardium, may also prove to be a mechanism for improving or replacing the diseased tissue. Charles E. Murphy et al., Skeletal Myoblast Transplantation for Repair of Myocardial Necrosis, J. Clin. Invest. 1996 98:2512-2523.